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(54) The method of processing the message for conditioning (conditionally) limited reception service

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Summary

The above mentioned invention deals with the processing method for realization of conditioning (conditionally) limited reception service in order to provide limited reception service needed for a fee-charging broadcasting thereof before being transmitted from the transmitting device (1) both eligibility management message (EMM) and eligibility control message (ECM) are encoded and then transmitted, and the receiving device (2) through the process of decryption of the split information only among the approved users encodes it for the second time, and by changing constantly the key value it is possible to maintain the stability of key value and to prevent hacker attacks or faulty subscribers` unlawful access.

Representative table

Table 1

The detailed statement
[The name of the invention]

The method of processing the message for conditioning (conditionally) limited reception service

[A brief explanation of the drawing]

The first table is the system schematic diagram of the above mentioned invention.
The second table deals with based on the above mentioned invention key degree of generation caused by the matrix mode

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The sixth table deals with based on the above mentioned invention flow chart of message processing for conditioning (conditional) limited reception service
As far as the above mentioned contents is an essential part open to the public, we did not record technical contents

(57) The sphere of application

Application 1

In order to give to individual subscriber title, for the method of dealing with the message applied to the limited reception system for the conditioning (conditional) limited reception service, which is equipped with the transmission device (1), which includes EMM/ECM generation part (3), which, encoding EMM (Entitlement Management Message), the control word (CW) needed for scramble, the control word (CW), generating the entitlement control message (ECM), which is eligibility message, outputs it, transmission part (4), which, using control word input on the above mentioned EMM/ECM generation part (3), makes the scrambles the broadcasting program, and after multiplexing it along with EMM/ECM information, transmits it via transmission medium, as well as the reception device (2), which has demultiplexing part (5), which, demultiplexing the data, received through the transmission medium, outputs it, processor (6), which, in case of receiving a data, after outputting and demultiplexing the control signal to the above mentioned demultiplexing part (5), outputs EMM/ECM information, using the control word (CW), descrambles received scrambled data and outputs it, smart card (7), which decrypts the split in the EMM, which is input to the above mentioned processor (6), and using again this split key, extracting the session key and control word (CW) from the ECM, outputs it to the above mentioned processor (6), it is referred as the first step (from 100 to 103), when, during creation of the extension key/ service key index, in case index extent is appropriate, personal key (PK), group key (GK), direct authority key (DEK) are created; the second step (104, 105), which, using the personal key (PK), which was created on the above mentioned first step (from 100 to 103), and group key (GK), encodes it into master personal key (MPK), and after creating the EMM message needed for modification of key value, transmits it to the reception side; the third step (106, 107), which, using the personal key (PK) and group key (GK), encodes the direct authority key (DEK), which was created on the first

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stage (from 100 to 103), after creation of EMM message, endowing the right, transmits it to the reception side; as well as the fourth step (from 108 to 111), which, after creating the control word (CW), using the direct authority key (DEK), encoding the control word (CW), creates the eligibility control message (ECM), and using the control word (CW), after scrambling the broadcast program, transmits it to the reception side; the fifth step (from 200 to 202), which, using the transmission process, which includes the fourth step, and master personal key (MPK), obtained from the smart card, decrypting the EMM message for alteration of the received key value, estimates whether the check SUM (CSUM), prior to encoding of decrypted data is valid; the sixth step (from 203 to 205), which, in case, if in the above mentioned fifth step (from 200 to 202) it is valid, obtains personal key (PK), group key (GK), decrypting personal key (PK), which obtained EMM message, endowing whether the right of receiving is given or not, into group key (GK), estimates whether the check SUM (CSUM) of the decrypted data is valid; and the seventh step (from 206 to 208), which, in case, it is valid in the above mentioned sixth step (from 203 to 205), obtains the direct eligibility key (DEK), using the obtained direct eligibility key (DEK), decrypting received ECM message, obtains the control word (CW), and using the above mentioned control word (CW), descrambles and outputs the broadcasting program; thus, the method of processing the message for conditioning (conditional) limited reception service has the specific feature, being arranged as a receiving process, which includes seven steps.

Application 2

the application 1 deals with the method of processing the message for conditioning (conditional) limited reception service, where the specific feature is that the data, which is input to key generator in the above mentioned first step (from 100 to 103), consists of the extension key, which is composed of eight bytes from the extension key index value, and service key, which is composed of eight bytes from service key index value.

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Application 3

the application 1 deals with the method of processing the message for conditioning (conditional) limited reception service, where the specific feature is that the structure of the EMM message for the endowment of right, is composed of the control field (CTRL), which is composed of the field (Sequence), indicating the sequence number of the message, field (Append), which indicates whether the next message exists or not, field (Encrypt), which indicates the state of using odd or even key during the encoding, as well as field (N), indicating the quantity of vectors, as well as field (KID), indicating the key number, used in vector encoding, as well as the multitude of the encoded vector field (Vector), which are composed of CSUM, which indicates check sum (Checksum) prior to the encoding, and Expiry/KGM, which shows channel number (ID), odd service key address (OSK), even service key address (ESK), odd extension key address (ODN), even extension key address (EDN), eligibility expiration period, and indicates key generation matrix number

Application 4

the application 1 deals with the method of processing the message for conditioning (conditional) limited reception service, where the specific feature is that the structure of message of the EMM for the alteration of the above mentioned key value consists of control field (CTRL), which is composed of field (Sequence), indicating the sequence number of messages, field (Append), indicating whether the next message exists or not, field (Encrypt), which indicates the state of using odd or even key during the encoding, as well as field (N), indicating the quantity of vectors, as well as field (KID), indicating the key number, used in vector encoding, as well as the multitude of the encoded vector fields (Vector), which are composed of CSUM, which indicates the KID, indicating the number of the key, which will alter, GADDR, indicating group address, in case it will be a group key, odd service key address (OSK), even service key address (ESK), odd extension key address (ODN), even extension key address (EDN), CSUM, which indicates check sum (Checksum) prior to the encoding.

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Application 5

the application 1 deals with method of processing the message for conditioning (conditional) limited reception service, where the specific feature is that the structure of the above mentioned eligibility control message (ECM) consists of control field (CTRL), which is composed of field (Sequence), indicating the sequence number of messages, field (Append), indicating whether the next message exists or not, field (Encrypt), which indicates the state of using odd or even key during the encoding, as well as field (N), indicating the quantity of vectors, as well as multiple vector field (Vector)

Application 6

the application 5 deals with method of processing the message for conditioning (conditional) limited reception service, where the specific feature is that the above mentioned vector field (Vector) consists of channel number (CH_ID), channel control field (CHctrl), odd control word (OCW), even control word (ECW), a second module of the EPOCH time (time), as well as the configuration of channel (access), present system time (month), and also field, which includes check sum (checksum) (csum) prior to encoding

Application 7

The specific feature of the processing method of message for conditioning (conditional) limited reception service is that the above mentioned OCW, ECW, time/ access/ month/ csum is the encoded information
* Reference information: the above information is opened to the public according to the contents of the most recent application